

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION, AND
THE COOPERATIVE RESEARCH CENTRE FOR SPATIAL INFORMATION OF AUSTRALIA; THE
NATIONAL INSTITUTE FOR SPACE RESEARCH OF THE MINISTRY OF SCIENCE AND
TECHNOLOGY OF THE FEDERATIVE REPUBLIC OF BRAZIL; THE EARTH SCIENCES SECTOR
OF THE DEPARTMENT OF NATURAL RESOURCES OF CANADA; AND THE CENTRE FOR
EARTH OBSERVATION AND DIGITAL EARTH OF THE CHINESE ACADEMY OF SCIENCE
CONCERNING COOPERATION IN USE OF EARTH OBSERVATION SCIENCE AND
TECHNOLOGY IN THE STUDY OF GLOBAL CHANGE**

THE COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION (“CSIRO”) AND THE COOPERATIVE RESEARCH CENTRE FOR SPATIAL INFORMATION (“CRCSI”) OF AUSTRALIA; THE NATIONAL INSTITUTE FOR SPACE RESEARCH (“INPE”) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE FEDERATIVE REPUBLIC OF BRAZIL; THE EARTH SCIENCES SECTOR (“ESS”) OF THE DEPARTMENT OF NATURAL RESOURCES OF CANADA; AND THE CENTRE FOR EARTH OBSERVATION AND DIGITAL EARTH (“CEODE”) OF THE CHINESE ACADEMY OF SCIENCE, hereinafter referred to as the “Participants”,

Considering that airborne and space-based Earth Observation (EO) systems have been instrumental in monitoring and assessing global atmospheric, terrestrial and oceanic changes, and that global change is an important challenge facing mankind and a priority for Governments and international research organizations around the world,

Noting that, in the context of broadly and relatively quickly-changing regional and local conditions, they acknowledged that an international network of EO organizations was needed and, as a result, have established the **COOPERATION IN USE OF EARTH OBSERVATION SCIENCE AND TECHNOLOGY IN THE STUDY OF GLOBAL CHANGE BETWEEN AUSTRALIA, BRAZIL, CANADA AND CHINA (“ABCC Program”)** to conduct global change studies, including climate alterations, natural hazards and water resources,

Wishing to strengthen cooperation between scientists, technicians, institutions, and countries around the world who are engaged in Earth Observation research,

Noting that under the ABCC Program, they will focus on providing data, interpretation, analysis and temporal overviews of the unique national ecological zones of their respective countries,

CONFIRMING their mutual interest in developing and/or strengthening cooperation in the field of Earth Observation related to global change detection and attribution, on the basis of this Memorandum of Understanding (MOU),

RECOGNIZING that this MOU establishes a framework for this cooperation in joint studies and scientific exchanges concerning Earth Observation science and technologies, on subjects of mutual interest,

DESIRING to improve cooperation between Australia, Brazil, Canada and China through participation in this MOU, while reinforcing and strengthening the research interests between the four countries,

HAVE COME to the following understanding:

1. PURPOSE

The purpose of this MOU is to establish a cooperative relationship among the Participants in the use of Earth Observation science and technology in the study of global change, on the basis of equality, reciprocity and mutual benefit.

2. OBJECTIVES

The Participants intend to jointly seek to:

- a) maximize use and development of space-based and other EO applications to document and assess global atmospheric, terrestrial and oceanic changes (including near shore) and their actual or potential impacts;
- b) improve overall capacity and methodologies for monitoring global change and provide accurate baseline information to decisions-makers;
- c) provide atmospheric, terrestrial, near shore and oceanic data, as well as tools for environmental assessments to document global change at regional level; and
- d) expand the basic knowledge base and stimulate exchanges of scientific and/or technical information.

3. PROJECT ANNEXES

This MOU is general in nature and is neither comprehensive nor exhaustive. When two or more Participants decide to enter into a form of cooperation as described in this MOU, they will conclude a Project Annex that sets forth the timing and scope of the specific form of cooperation and any other matters on which consent might be desirable.

4. FORMS OF COOPERATION

Cooperative initiatives under this MOU may include the following:

- a) collaboration on individual research issues of mutual interest in areas of interest identified under this MOU;
- b) exchange of personnel to work on collaborative projects;
- c) organization and support of technical seminars and meetings;
- d) education and training;
- e) exchange of scientific and technical information relating to the development of work on collaborative projects;
- f) liaison and coordination with the industrial, academic and professional sectors, and other organizations, where appropriate; and
- g) other forms of cooperation as jointly decided upon by the Participants.

5. AREAS OF COOPERATION

Cooperation under this MOU may include the following areas of interest, where appropriate:

- a) Earth Observation data applications including detecting changes in snow and ice cover, flood impacts and amelioration, land cover changes (including forest-related) and desertification, effects of drought, changes in marine environments (including near-shore ocean changes);
- b) development of methodologies and techniques to analyse the processes of change;
- c) terminology and data standards development
- d) Earth Observation data collection, integration, processing and analysis;
- e) development of Earth Observation technology; and
- f) other areas of mutual interest as jointly decided upon by the Participants.

6. ABCC SECRETARIAT

The Participants agree to establish a Program Secretariat at CEODE with the intended role being to maintain program continuity, communications, associated administrative/coordination matters, and other duties as mutually decided upon that are required to facilitate the smooth functioning of the ABCC Program for the

duration of the MOU. The Participants understand that the Program Secretariat will be completely funded by CEODE, and will be based in Beijing, China.

7. SCIENTIFIC COMMITTEE

In order to implement cooperation under this MOU, the Participants will establish a Scientific Committee, consisting of a maximum of three scientists per country. The Participants understand that the Scientific Committee will identify potential cooperative activities and details of implementation. Appendix A of this MOU refers to The Terms of Reference for the Scientific Committee.

8. SHARING OF INFORMATION

The Participants intend to make all the scientific and technical results from the cooperative projects and initiatives conducted under this MOU available publicly on the websites identified by them.

9. FINANCIAL CONSIDERATIONS

- (a) The Participants understand that cooperation under this MOU is subject to the availability of funds and resources from each Participant.
- (b) Each Participant will bear the costs of its participation, unless otherwise indicated in a Project Annex under this MOU.

10. EQUIPMENT

The Participants understand that property or equipment of whatever nature or kind furnished by either Participant in connection with work under this MOU should remain the property of the Participant furnishing such property or equipment, unless otherwise consented to in writing under a Project Annex.

11. APPLICABLE LAW

The Participants will ensure that all activities related to this MOU conducted in the territory of their respective countries is carried out in accordance with the applicable laws, statutes and regulations in force in that country.

12. PARTICIPATION OF OTHER ORGANIZATIONS

For cooperation requested by any of the Participants that extends to subjects outside of their special expertise, the Participants may, upon their mutual written consent, include the participation of other government organizations in the development of activities falling within the scope of this MOU.

13. DIFFERENCES IN INTERPRETATION AND APPLICATION

The Participants will seek to resolve any differences regarding the interpretation or implementation of this MOU amicably through consultations.

14. STATUS

This MOU is not legally binding.

15. PERIOD OF VALIDITY AND DISCONTINUATION

- (a) This MOU will enter into operation upon its signature by the Participants and remain in operation for five (5) years.
- (b) The Participants may amend or extend this MOU in writing upon their mutual consent.
- (c) Any Participant may at any time cease its participation in this MOU by giving a 60 days written notification to the other Participants.
- (d) The Participants understand that the end of this MOU will not affect the implementation of any existing Project Annex. The Participants will ensure that the end or amendment of the Project Annexes will be in accordance with the provisions of each specific Project Annex.

APPENDIX A: TERMS OF REFERENCE FOR THE SCIENTIFIC COMMITTEE

The Participants understand that:

Objective

1. As outlined in paragraph 7 of the MOU, the Scientific Committee for the ABCC Program (“Committee”) will identify the cooperative activities and details of implementation, monitoring progress, and providing direction for future cooperation.

Scope

2. The Committee will guide the Participants in strengthening cooperation for the benefit of all countries. In particular, it will conduct the following activities:

- a) discuss cooperation in areas falling within the MOU and conduct ongoing dialogue and exchange information;
- b) propose specific activities for cooperation within the terms of the MOU;
- c) initiate, review and unanimously recommend Project Annexes to the MOU;
- d) review and unanimously recommend the release of information/data provided to all Participants under the scope of the MOU;
- e) monitor progress towards the objectives of the general thrust for cooperation as well as specific activities; and
- f) recommend new thrusts for cooperation in areas of mutual interest as identified under paragraph 7 (vi) of the MOU.

Resources

Administration

3. Each Participant will organize and provide secretariat support for the Committee meeting in its country including arranging the venue and disseminating information such as the minutes of meetings to members.

Membership

4. The Committee will be comprised of a maximum of three members from each Participant (one co-Chair and one or two senior scientific representatives). To overcome scheduling issues, each co-Chair will have the ability to designate a substitute Chair.

Funding for the Committee

5. Each Participant will pay for its own costs unless otherwise decided by the Participants in writing. The Participants intend for any other organization(s) involved in Committee activities to pay for their own expenses.

Expectations

6. Subject to mutual consent of the Participants, the Committee will meet once a year with the meeting location alternating between the four countries. Where possible, meetings should be held in association with other events (such as symposium or conference) for better efficiency and reduced costs. The duration of the Committee meetings may range from one-half day to two days. There will be some preparation required for meetings, and the Committee members will use e-mail or fax to communicate.

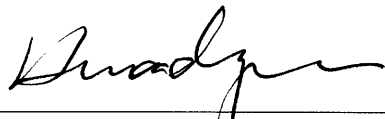
Deliverables

7. The key deliverables expected from the Committee meetings and other discussions are:

- a) summary of meetings (provided by the country hosting the meetings);

- b) a report, prepared by the Participants, documenting the progress on specific activities carried out as well as new initiatives and thrusts in areas of mutual interest for cooperation under the MOU;
- c) advice on communication strategies and needs; and
- d) advice on emerging issues.

SIGNED in four originals at PERTH, AUS., this 25 day of AUGUST, 2011,
in the English and French languages, each version being equally valid.



FOR THE CENTER FOR EARTH
OBSERVATION AND DIGITAL, CHINA

NAME: Gao Huedong

TITLE: Director General



WITNESS

NAME: FRED CAMPBELL

SIGNED in four originals at PERTH, AUS., this 25 day of AUGUST, 2011,
in the English and French languages, each version being equally valid.

Hilceé S. Ferri

FOR THE NATIONAL INSTITUTE OF
SPACE RESEARCH, BRAZIL

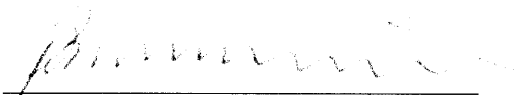
NAME: HILCEÉ SANTOS FERREIRA

TITLE: ADVISOR, FOREIGN AFFAIRS OFFICE

Fred Campbell
WITNESS

NAME: FRED CAMPBELL


SIGNED in four originals at PERTH, Aus., this 25 day of August, 2011,
in the English and French languages, each version being equally valid.



FOR THE COOPERATIVE RESEARCH
CENTRE FOR SPATIAL INFORMATION,
AUSTRALIA

NAME: PETER WODGATE

TITLE: CEO CRCSI



WITNESS

NAME: FRED CAMPBELL

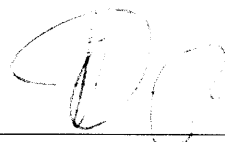
SIGNED in four originals at _____, this _____ day of _____, 2011,
in the English and French languages, each version being equally valid.



**FOR THE EARTH SCIENCES SECTOR,
CANADA**

NAME:

TITLE:



WITNESS

NAME:

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PORTARIA

NÚMERO
PORT-1914

FL.: **01** DE: **01**

DELEGAÇÃO DE COMPETÊNCIA

ENTRADA EM VIGOR

IMEDIATA

O Diretor do Instituto Nacional de Pesquisas Espaciais - INPE, do Ministério da Ciência e Tecnologia - MCT, no uso da competência que lhe foi delegada pelo Ministro de Estado da Ciência e Tecnologia, através da Portaria nº 407, de 29/06/2006, resolve:

Delegar competência à servidora **HILCÉA SANTOS FERREIRA**, CPF 305.377.031-87, para assinar o Memorando de Entendimento - MOU entre o INPE, o Commonwealth Scientific and Industrial Research Organization - CSIRO, o Earth Sciences Sector - ESS e o Center for Earth Observation and Digital Earth - CEODE, dentro do escopo do Programa de Cooperação entre Austrália-Brasil-Canadá-China (Programa ABCC), em Uso da Ciência e Tecnologia de Observação da Terra no Estudo das Mudanças Globais.

REVOGA:

DISTRIBUIÇÃO:
ESPECÍFICA

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18/08/2011

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